AMENDMENTS TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

Claim 1 (currently amended) In a printing environment having equipment for processing print jobs, a method, comprising the steps of:

receiving a selected print job;

dividing the selected print job into batches, where a size of each of the batches is selected to substantially optimize a time period it takes for the selected print job to be fully processed; ~~and~~

to determine the total production time T_{prod}, which includes the time taken to process the first batch followed by the time to process the subsequent batches, use the following equation (where r_i represents the processing time of each operation per production item, i represents the number of the operation in sequence, r_1 represents the time it takes to print a single copy of the document, h_i represents the inter-batch handling time, S_i represents the setup time for each operation, and N represents the number of production items in the print job):

$$T_{prod} = \sum_{i=1}^{i=n}[br_i + h_i] + S_1 + [\max(br_1 + h_i)](\frac{N}{b} - 1) ; \text{ and}$$

processing the batches separately and concurrently to complete processing of the print job.

Claim 2 (currently amended) The method of claim 1, wherein the size of each of the batches is based at least in part on the time it takes for the equipment to fully process each batch;

to determine the optimal batch size, use the following equation:

$$b = \sqrt{\frac{\max_i(h_i)N}{\sum_{i=1}^{n}r_i - \max_i(r_i)}} .$$

Claim 3 (currently amended) The method of claim 1, wherein the size of each of the batches is based at least in part on the time it takes for the ~~equipment~~ printing environment to switch from processing a first batch to ~~operating on a second job~~ processing a second batch for each operation that is required to complete the processing of the print job.

2

Claim 4 (currently amended) The method of claim 1, wherein the batches of the selected print job are all processed by a same group of the equipment in a serial sequence of operations.

Claim 5 (original) The method of claim 1, wherein the size of each of the batches is chosen to fully optimize the time period it takes the selected print job to be fully processed.

Claim 6 (cancelled).

Claim 7 (original) The method of claim 1, wherein the selected print job entails at least one assembly where documents from multiple sources are assembled into a single entity.

Claim 8 (currently amended) A medium for storing instructions for performing a method in a printing environment having equipment for processing print jobs, comprising the steps of:

receiving a selected print job;

dividing the selected print job into batches, where a size of each of the batches is selected to substantially optimize a time period if it takes for the selected print job to be fully processed; and

processing the batches separately and concurrently to complete processing of the print job, wherein each batch is processed by a subset of the equipment.

Claim 9 (original) The medium of claim 8, wherein the size of each of the batches is based at least in part on the time it takes for the equipment to fully process each batch.

Claim 10 (currently amended) The medium of claim 8, wherein the size of each of the batches is based at least in part on the time it takes for the equipment printing environment to switch from processing a first batch to operating on a second job processing a second batch for each operation that is required to complete the processing of the print job.

Claim 11 (original) The medium of claim 8, wherein the subsets of each equipment that process the batches are mutually exclusive.

Claim 12 (original) The medium of claim 8, wherein the size of each of the batches is chosen to fully optimize the time period it takes the selected print job to be fully processed.

Claim 13 (withdrawn) In a printshop, a method of optimizing the printing of a print job, comprising the steps of:

identifying each operation that is required to complete the print job, said print job being for a specified number of production times;

determining a processing time required for each operation per production item;

determining an inter-batch handling time that is required to switch between batches for each operation;

determining a set up time for each operation; and

based on the processing times, the inter-batch handling times, and the setup times, determining the batch sizes of batches for the print job, wherein the batches are to be printed.

Claim 14 (withdrawn) The method of claim 13, wherein each batch is approximately a same size.

Claim 15 (withdrawn) The method of claim 13, wherein each batch is printed in parallel with other batches.

Claim 16 (withdrawn) The method of claim 13, wherein each batch is printed by a separate autonomous cell.

Claim 17 (original) The method of claim 1, wherein batch sizes are chosen to minimize total time required for complete printing of the print job.

Claim 18 (withdrawn) In a printshop, a method of comprising the steps of:

representing a print job as a sequence of interconnected nodes, wherein each node represents an operation and said nodes are interconnected by edges representing workflow between operations;

identifying parts in the sequence of nodes and edges extending from an initial node, that has no predecessor nodes interconnected to it, to a last node, that has no successor nodes interconnected to it, in the sequence of interconnected nodes representing the print job;

identifying a critical path among the paths, said critical path being the path that takes a longest amount to time complete processing batch; and

dividing a print job into batches of given batch sizes for processing by the printshop, wherein batch sizes are chosen to optimize processing time for the critical path.

Claim 19 (withdrawn) The method of claim 18, wherein the method is performed by an electronic device.

Claim 20 (withdrawn) The method of claim 18, wherein the electronic device is a computer system.